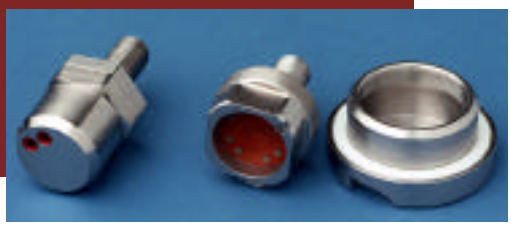
SMART BOLT

A MECHANICAL SEAL WITH AN EMBEDDED ELECTRONIC TAG



A special bolt has been developed which functions as both a tag and a seal, and has acquired the name "Smart Bolt." It is a mechanical seal with embedded tag/seal information. The bolt stores information (tag portion) such as a unique identification number, container and stored content data, and seal tamper indications. Once the bolt is applied and tightened to its specified torque, a reader/verifier (special adapter connected to a PC) is used to initialize the tag. Subsequent readings will verify the tag information including whether or not the seal was broken. The Smart Bolt has been specifically designed to tag/seal AT-400R canisters, but the bolt can be utilized in any application where standard bolts are used for sealing. The Smart Bolt is currently available in two versions: 1) single-use, for long term storage applications where stored materials would be infrequently accessed and 2) reusable, for sealing applications where material is stored for short periods of time or is frequently accessed. Several other designs for different types of sealing applications and scenarios are currently being investigated.

For more information, please contact:

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Single-Use Version

The single-use version of the Smart Bolt is intended for long-term applications where access to the sealed contents would be minimal. A protective threaded cover screws over the bolt protecting the electrical contacts from the environment.

Features:

- Single-use (but can be factory refurbished)
- 10mm threaded diameter
- Passive tag design – no battery
- Life of tag/seal: indefinite
- Mechanical seal, embedded electronic (ROM) tag
- Stainless steel construction – non-corrosive
- Temperature range: -40° C to +125° C
- Reader/Verifier includes an electronic tag reader (adapter) and a laptop computer
- Tag reading via electrical contacts
- Tag reader has RS-232C output to the computer
- Two levels of password control (verifier and tag)
- Verifier is capable of initializing and verifying tag
- Tag memory storage size: 128 bytes

The Smart Bolt was developed in collaboration between the All-Russian Research Institute of Experimental Physics (VNIIEF) and Sandia National Laboratories (SNL).